Claims

1. A method of operating a file server, comprising the steps of:

receiving a CIFS request; and

recording state at that time about the request; and

restoring state upon reboot as last recorded; and

attempting to continue the CIFS session that the request was part of.

2. The method of claim 1, wherein said step of receiving a CIFS request also includes the steps of

acknowledging receipt of said CIFS request; and

processing said CIFS request.

3. The method of claim 1, wherein said step of recording state includes determining automatically whether the processing of a CIFS request is at a point where said state can be reliably recorded.

4. The method of claim 3, wherein said step of recording state occurs at points based on the progress of processing of a CIFS request.

5. The method of claim 4, wherein said state is recorded to a non-volatile storage

6. The method of claim 1, wherein said step of recording state occurs as part of an elective reboot or elective takeover of a server further comprising:

ignoring current CIFS requests;

processing all active CIFS requests; and

recording state.

7. The method of claim 6, wherein all currently active requests are processed to completion.

8. The method of claim 1, wherein said step of recording state further comprises the step of determining whether said server shutdown was elective or non-elective.

9. The method of claim 8, wherein said step of determining whether said server shutdown is elective or non-elective is a function of a flag value stored in said non-volatile storage.

10. The method of claim 9, wherein said flag value indicates said server shutdown was elective.

11. The method of claim 9, wherein said flag value indicates said server shutdown was non-elective.

12. The method of claim 1, wherein said step of recording state further comprises the step of determining whether recovery will be accomplished by rebooting the affected server or takeover by another server.

13. The method of claim 12, wherein said step of determining whether recovery will be accomplished by rebooting the affected server or takeover by another server is a function of said flag value stored in said non-volatile storage.

14. The method of claim 13, wherein said flag value indicates said recovery will be accomplished by rebooting the affected server.

15. The method of claim 13, wherein said flag value indicates said recovery will be accomplished by takeover by another server.

16. The method of claim 1, wherein said step of restoring state further comprises determining whether recovery is by reboot or takeover by another server.

17. The method of claim 16, wherein said step of determining whether recovery is accomplished by reboot or takeover by another server is a function of said flag value stored in said non-volatile storage.

18. The method of claim 17, wherein said reboot comprises the steps of:

rebooting the affected server's operating system; and

rebuilding in-memory data structures to the state prior to said reboot.

19. The method of claim 18, wherein said rebuilding in-memory data structures further comprises fetching the state stored in said non-volatile storage to rebuild said in-memory data structures.

20. The method of claim 17, wherein said takeover comprises fetching the state stored in the non-volatile storage and rebuilding said in-memory data structures in another server using said state.

21. The method of claim 1, wherein said step of attempting to continue the CIFS session that the request was part of further comprises the step of processing the remaining portion of the uncompleted request.

22. Apparatus including;

means for receiving a CIFS request; and

means for recording state at that time about the request; and

on reboot, restoring state as last recorded; and

means for attempting to continue the CIFS session that the request was part of.

23. The apparatus of claim 22, wherein said means for receiving a CIFS request includes a means for acknowledging receipt of said CIFS request and a means for processing the request.

24. The apparatus of claim 22, wherein said means for recording state includes a means to determine automatically whether the processing of a CIFS request is at a point where said state can be reliably recorded.

25. The apparatus of claim 24, wherein said means for recording state occurs at points based on the progress of processing of a CIFS request.

26. The apparatus of claim 25, wherein said state is recorded to a non-volatile storage

27. The apparatus of claim 22, wherein said means for recording said state occurs as part of an elective reboot or elective takeover of a server further comprising:

means for ignoring current CIFS requests;

means for processing all active CIFS requests; and

means for recording state.

28. The apparatus of claim 27, wherein all currently active requests are processed to completion.

29. The apparatus of claim 22, wherein said means for recording state further comprises a means for determining whether said server shutdown was elective or non-elective.

30. The apparatus of claim 27, wherein said means for determining whether said server shutdown was elective or non-elective is a function of a flag value stored in said non-volatile storage.

31. The apparatus of claim 30, wherein said flag value indicates said server shutdown was elective.

32. The apparatus of claim 30, wherein said flag value indicates said server shutdown was non-elective.

33. The apparatus of claim 22, wherein said means for recording state further comprises a means for determining whether recovery will be accomplished by rebooting the affected server or takeover by another server.

34. The apparatus of claim 33, wherein said means for determining whether recovery will be accomplished by rebooting the affected server or takeover by another server is a function of said flag value stored in said non-volatile storage.

35. The apparatus of claim 34, wherein said flag value indicates said recovery will be accomplished by rebooting the affected server.

36. The apparatus of claim 34, wherein said flag value indicates said recovery will be accomplished by takeover by another server.

37. The apparatus of claim 22, wherein said means for restoring state further comprises means for determining whether recovery is by reboot or takeover by another server.

38. The apparatus of claim 37, wherein said means for determining whether recovery is by reboot or takeover by another server is a function of said flag value stored in said non-volatile storage.

39. The apparatus of claim 38, wherein said reboot further comprises:

means for rebooting the affected server's operating system; and

means for rebuilding in-memory data structures to the state prior to said reboot.

40. The apparatus of claim 39, wherein said means for rebuilding in-memory data structures further comprises fetching the state stored in said non-volatile storage to rebuild said in-memory data structures.

41. The apparatus of claim 38, wherein said takeover comprises means for fetching the state stored in said non-volatile storage and rebuilding said in-memory data structures in another server using said state.

42. The apparatus of claim 22, wherein said means for attempting to continue the CIFS session that the request was part of further comprises a means for processing the remaining portion of the uncompleted request.

43. Non-volatile memory, said non-volatile memory having storage capable of holding information, said information including;

information identifying the state of a first device; and

information identifying a flag value.

44. The apparatus of claim 43, wherein said flag value is capable of being interpreted to indicate

rebooting said first device was an elective function;

rebooting said first device was a non-elective function;

takeover of said first device by a second device was an elective function; and

takeover of said first device by said second device was a non-elective function.

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